

REMARKS/ARGUMENTS

The amendments set forth above and the following remarks are responsive to the points raised by the Office Action dated March 2, 2007. In view of these amendments and the following remarks, reconsideration is respectfully requested.

The Pending Claims

Claims 1-9 and 11-19 are currently pending. The claims are amended to correct informalities. Claims 1 and 2 are amended to describe the invention more clearly. No new matter has been added, and the basis for the amended claim language may be found within the original specification, claims, and drawings. Support for claims 1 and 2 may also be found in the specification at, e.g., Figure 1. The activator, with the cam and followers, can only function when the shift rotates in one direction. In the other direction of rotation, the steps in the cam would block rotation by engaging the cam followers 14.

Several changes have been made in the specification to improve its form. These changes are essentially editorial in nature and do not constitute the addition of new matter.

The Office Action

Claims 1-4, 8, 9, 11-13, and 16-19 were rejected under 35 U.S.C. § 103 as unpatentable over U.S. Patent No. 4,599,546 to Uemura (hereinafter, "Uemura") in view of U.S. Patent No. 3,675,103 to Elliott (hereinafter, "Elliott").

Claims 5-7, 14, and 15 were rejected under § 103 as unpatentable over Uemura in view of Elliott taken with U.S. Patent No. 2,454,882 to Oakley (hereinafter, "Oakley").

Each of these rejections is separately and respectfully traversed.

A *prima facie* case of obviousness requires that the cited combination of references teaches each and every element of the claims. The obviousness rejection of independent claims 1 and 2 cannot be maintained because the cited combination of references does not teach each and every element of amended independent claims 1 and 2.

Amended claims 1 and 2 each define a rotating electrical machine comprising, *inter alia*, a rotor that rotates in only a single direction.

Elliott and Uemura fail to teach or suggest, either alone or in combination, a rotating electrical machine including a rotor that rotates in only a single direction, as claimed. In contrast to the presently claimed invention, Uemura teaches a reversing electric motor. In operation, the shaft of the motor of Uemura rotates in one direction until the switches operate, causing the shaft to rotate the motor in a second direction (Uemura, e.g., col. 6, lines 12-23). Like Uemura, Elliott also teaches a reversing electric motor, in contravention of the motor and switch arrangement of the present claims. Elliott teaches that the drive motor reverses the direction of rotation of its shaft to reverse the direction of travel of wiper blades driven by the motor to wipe the windshield of a vehicle (Elliott, e.g., col. 1, lines 53-59).

Because the motors of Uemura and Elliott activate switches that reverse the direction of rotation of the motor shaft 3, they do not include a rotor that rotates in only a single direction, as claimed. Accordingly, the principle of operation of the motors of Uemura and Elliott is vastly different from the principle of operation of the claimed rotating electrical machine. Uemura and Elliott, therefore, fail to teach or suggest an electrical machine that rotates in only a single direction, as claimed in amended claims 1 and 2. Because Uemura and Elliott fail to teach or suggest, either alone or in combination, an electrical machine in which the rotor rotates in only a single direction, the obviousness rejection cannot be maintained.

Claims 1 and 2 define a rotating electrical machine in which the switch reverses the current in the windings, which are included in the stator. The switch acts as a commutator to reverse current flow in the winding in order to enable single direction, continuous rotation of the machine. The rotor, positioned within the stator, produces a magnetic field. The rotor rotates in response to the alternating nature of the current in the stator. The claims also require a mechanical activator that acts on the switch and is moveable by the shaft to which the rotor is attached.

The arrangement of the components of the motor of Uemura is very different from that of the presently claimed electrical machine. The motor of Uemura includes a field magnet 61, armature 1, and commutator 62. The Office Action characterizes the field magnet

61 as a stator. One of ordinary skill in the art would understand an armature to be a wire coil (a winding) that carries a current and rotates in a magnetic field. Thus, one of ordinary skill in the art would understand Uemura to teach a motor including a *stator* that produces a magnetic field and a *rotor* having a winding, as shown in, e.g., Figure 5 of Uemura.

This is in direct contravention of what is claimed. The claims require a *rotor* that produces a magnetic field and a *stator* that includes a winding, not a stator that produces a magnetic field and rotor having a winding, as taught by Uemura.

Moreover, one of ordinary skill in the art would understand that a motor having a winding on its rotor, as taught by Uemura, requires a commutator for changing the direction of current flow in the winding (i.e., for allowing current in one direction through the winding and then allowing current in an opposite direction through the winding). In Uemura, the switches for supplying current to the winding are relay coils. Those switches supply current to the commutator which, in turn, supplies current to the winding. The switches in Uemura change the polarity of the winding brushes but they do not reverse the direction of current flow in the winding, as claimed. In contrast, the direction of current flow in the winding is reversed by the commutator in Uemura.

Furthermore, the switches of Uemura are not acted on by a mechanical activator, as claimed. The switch (29, 28, 41) referred to in the Office Action does not supply current to any part of the motor in Uemura. This switch supplies current to relay coils 33, 43 which, in turn, activate the switches supplying current to the commutator brushes.

For the reasons set forth above, the motor of Uemura is vastly different from the claimed rotating electrical machine in structure, arrangement, and in principle of operation. Uemura is, indeed, so far removed from the claimed invention that one of ordinary skill in the art reading Uemura would not be led to the claimed rotating electrical machine. Moreover, Elliott and Oakley do not cure the deficiencies of Uemura. Accordingly, the present claims patentable over the cited references.

Since the independent claims are allowable for the reasons set forth above, the dependent claims are also allowable because they depend from patentable independent claims.

For the reasons set forth above, reconsideration of the rejections is respectfully requested.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

Stephanie M. Lawley
Stephanie M. Lawley, Reg. No. 55362
LEYDIG, VOIT & MAYER
700 Thirteenth Street, N.W., Suite 300
Washington, DC 20005-3960
(202) 737-6770 (telephone)
(202) 737-6776 (facsimile)

Date: Sept. 4, 2007

SML/tbh